Project Number and Title: 99401 - Assessment of Spot Shrimp Abundance in Prince William Sound a Decade After the *Exxon Valdez* Oil Spill.

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Abstract: The commercial spot shrimp (*Pandalus platyceros*) harvest in Prince William Sound (PWS) began in the 1950's, increased rapidly after 1975 and peaked at over 110 tonnes in 1986. After 1988, the harvest decreased rapidly until 1992 when the fishery was closed and remains closed. Annual surveys of spot shrimp abundance in western PWS from 1989 to 1998 by the Alaska Department of Fish and Game (ADF&G) have shown a continued decline in catch per unit effort (CPUE). The purpose of this project is to estimate the abundance of spot shrimp and determine the structure of the spot shrimp population in western PWS in order to determine whether the population is recovering from depletion. The project augments current Alaska ADF&G surveys by broadening the geographical coverage and increasing the amount of replication within the existing survey area. The objectives in the first year of this study were to 1) estimate spot shrimp abundance (CPUE) in western PWS, 2) determine the sex and size composition of spot shrimp at the study sites, and 3) estimate spot shrimp fecundity and relative number of egg-bearing females at the study sites. We sampled spot shrimp in October 1999 using strings (two/site) of 22 shrimp pots each. Shrimp pots were fished at six sites in western PWS previously surveyed by ADF&G and at six additional sites in the ADF&G survey area. We measured the carapace length of all shrimp and counted all ovigerous females. Nonovigerous shrimp were subsampled for sexing and ovigerous shrimp were subsampled for fecundity estimates.

Our preliminary mean CPUE estimates at traditional ADF&G sites in October 1999 appear to exceed those obtained by ADF&G in 1998 both in number and weight of shrimp per pot. Mean CPUE by number in 1999 (12 shrimp/pot) exceeded that in 1998 by 30%. Mean CPUE by weight in 1999 (273 g) exceeded that in 1998 by 6 x. These interannual differences increased to 63% and 8 x for CPUE by number and by weight, respectively, when our six additional sites were compared to 1998 values at traditional ADF&G sites. However, estimates of the variability in the ADF&G CPUE data were not available at this writing. Moreover, more than one year of increasing CPUE estimates would be necessary to indicate progress toward recovery in the spot shrimp population in western PWS. Data analysis of sex ratios and shrimp fecundity are in progress.